

### **DETAILED ACTION**

- Claims 18-34 are pending.
- Claims 1-17 are cancelled.
- This office action is in response of the applicant's arguments and remarks filed 07/27/2011.

### ***Response to Arguments***

Applicant's arguments filed 07/27/2011 have been fully considered but they are not persuasive.

In response to applicant's arguments regarding the withdrawal of the 112 rejection first paragraph. Examiner respectfully disagrees. Independent claims 18 requires "...transmitting digital signals between the two measurement transmitters via the additional communication connections that is arranged between the two communication connections...", and applicant's arguments recites: ".....is clearly shown by the circuit in fig. 1, for example. From the description on pages 4 and 5 of the specification". The applicant's arguments and the specification as originally filled has no support and does not provide sufficient evidence and disclosure as how the additional communication connection is arranged between the first and second measurement communications in order to transmit digital signals between them? How the digital signals are selected to be transmitted through the additional communication connection? How the measurement transmitters can monitor the transmission of digital signals through the additional communication connections? . A person of ordinary skill in the art of generating pulses in a drilling fluid cannot make and use the invention

because it fails to explain how an additional communication connection is retrieved or technically arranged from the first and second communication connection in order to transmit digital signals between the first and second measurement communications. Therefore, claim 18 contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 18-34 are rejected as best understood. Therefore, examiner maintains his rejection.

In response to applicant's arguments regarding claim 18 that Langels in view of Heidepriem does not disclose additional communication connections that is arranged between the two communication connections. Examiner respectfully disagrees. Examiner respectfully notifies the applicant first to fix the issue regarding the 112 rejection first paragraph for the recited limitations. Therefore, examiner maintains his rejection.

***Response to Amendment***

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 18 requires "...transmitting digital signals between the two measurement transmitters via the additional communication connections that is arranged between the two communication connections...", and applicant's arguments recites: ".....is clearly shown by the circuit in fig. 1, for example. From the description on pages 4 and 5 of the specification". The applicant's arguments and the specification as originally filled has no support and does not provide sufficient evidence and disclosure as how the additional communication connection is arranged between the first and second measurement communications in order to transmit digital signals between them? How the digital signals are selected to be transmitted through the additional communication connection? How the measurement transmitters can monitor the transmission of digital signals through the additional communication connections? Therefore, claims 19-34 are rejected as best understood.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 18-20, 22-23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Langels et al. (US6473656B1)*** in view of ***Heidepriem (US2006/0164771A1)***.

**As per claim 18**, Langels et al. discloses a method for transmitting measured values between two measurement transmitters, comprising the steps of:

Transmitting via two communication connections (*Langels et al. fig 2, col 3 In 58-65*), digital signals according to the master/slave principle (*Langels et al. fig 2, col 3 In 58-65*) and analog signals to a control system (*Langels et al. fig 2:45: wherein the technology module 45 is performing as a control system for the network*), which serves as master, whereas a first of the two measurements transmitters is connected via a first of the two communication connections with the control system (*Langels et al. fig 2:40: wherein the technology module 40 is connected to the control system 45*), and a second of the two measurements transmitters is connected via a second of the two communication connections with the control system (*Langels et al. fig 2:43: wherein the technology module 40 is connected to the control system 45*).

transmitting digital signals between the two measurement transmitters (*Langels et al. fig 2, col 3 In 58-65*) via the additional communication connections (*Langels et al. fig 2:46*) that is arranged between the two communication connections (*Langels et al. fig 2:46, col 3 In 58-65*);

using the first measurement transmitter as a receiver measurement transmitter and (*Langels et al. fig 2:40*) the second measurement transmitter as a transmitting measurement transmitter (*Langels et al. fig 2:43*); and

examining incoming digital signals at the receiving measurement transmitter (*Langels et al. fig 2:40, wherein technology module 40 is equivalent to module 8*) for at least one characteristic value (*Langels et al. col 3 In 1-16: wherein*

***characteristic values are interpreted as "setpoint" from technology module 9 or "sensor value" from technology module 11)*** of the transmitting measurement transmitter (***Langels et al. fig 1:9,11***), in order to find measured values needed for evaluation (***Langels et al. col 3 In 37-43***) in the receiver measurement transmitter (***Langels et al. fig 2:40, technology module 8 is equivalent to module 40***).

Langels et al. does not disclose a method for transmitting measured values between two measurement transmitters providing an additional communication connection for the transmission of the digital signals between the two communication connections.

Heidepriem discloses a method for transmitting measured values between two measurement transmitters providing an additional communication connection for the transmission of the digital signals between the two communication connections (***Heidepriem par[0035]-[0036]: wherein the additional communication connection is interpreted as a direct communication between the two measurements transmitters without using the control system, and the "HART protocol" is provided as a type of transmission "referring to par[0027]"***).

Therefore, it would have been obvious to implement an additional communication connection for the transmission of the digital signals between the two communication connections of Heidepriem in the Langels et al. method for transmitting measured values between two measurement transmitters.

The motivation would be to provide a device for transmitting, exchanging, and/or forwarding data and/or information in the context of industrial process and/or automation

technology, and a device which permits a redundant data communication because a sensor or transmitter can exchange data and information with another sensor or transmitter via a plurality of paths (Heidepriem par[0001], [0006]).

**As per claim 19**, Langels et al. in view of Heidepriem discloses the method wherein:

communication between the measurement transmitters (***Langels et al. fig 1:9,11***) and the control system (***Langels et al. fig 1:1***) occurs according to the HART®-standard (***Heidepriem par[0027], [0033]***).

**As per claim 20**, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter evaluates the units characterizing number associated with a given numerical value (***Langels et al. col 3 In 1-16***); and

the meaning of the units characterizing number is established in the HART®-standard (***Heidepriem fig 2:3, par[0027], [0035]: wherein the circular elements at the end of the individual communication paths 3 characterize a first type of HART transmission***).

**As per claim 22**, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter is operated in master mode (***Langels et al. fig 1:1 & 8, col 3 In 1-16: wherein the module 8 reads out the measured values of the transmitting measurement transmitters such as setpoint values from***

**module 9 and sensor values from module 11)** and reads the measured values out of the transmitting measurement transmitter (**Langels et al. col 3 ln 1-16**).

**As per claim 23**, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter (**Langels et al. fig 1:8, technology module 8 is equivalent to module 40**) and the transmitting measurement transmitter (**Langels et al. fig 1:9,11**) register different measured variables (**Langels et al. col 3 ln 1-16**).

**As per claim 33**, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter accepts and evaluates signals from more than one transmitting measurement transmitter (**Langels et al. fig 2:40: wherein the receiver measurement transmitter herein “technology module” evaluates signals from transmitting measurement transmitters herein “technology modules” 41 & 43**).

2. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)**, in view of **Heidepriem (US2006/0164771A1)** and further in view of **Larson et al. (US6850973B1)** herein after **Larson**.

**As per claim 21**, Langels et al. in view of Heidepriem does not disclose the method wherein the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals.

Larson et al. discloses the method wherein:

the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals (**Larson et al. fig 1, col 3 In 11-36**).

Therefore, it would have been obvious to implement the Hart burst mode feature of Larson et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a communication protocol that is implemented in process control network with a different physical configuration, allows transmission of non-process control information without affecting the network's ability to perform process control (Larson col 3 In 32-37).

3. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)**, in view of **Heidepriem (US2006/0164771A1)** and further in view of **Cook et al. (US2004/0049358A1)**.

**As per claim 24**, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter, a computer unit is installed with an evaluation program, which determines from the different measured variables a derived measurement variable.

Cook et al. discloses the method wherein:

the receiver measurement transmitter, a computer unit is installed with an evaluation program (**Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer**



*unit*), which determines from the different measured variables a derived measurement variable (*Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable*).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

**As per claim 25**, Langels et al. in view of Heidepriem does not disclose the method, wherein the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a pressure measuring device, which determine, respectively, flow velocity and pressure in a medium.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device (*Cook et al. fig 1:140, par[0056]*) and the transmitting measurement transmitter is a pressure measuring device (*Cook et al. fig 1:160, par[0056]*), which determine, respectively, flow velocity and pressure in a medium (*Cook et al. fig 7, par[0033]-par[0034]*).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

**As per claim 26**, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit (*Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit*), which determines, from the pressure value and flow velocity of the medium, a derived, measured variable (*Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable*).

**As per claim 27**, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

the vortex measuring device contains an additional, installed, temperature sensor (*Cook et al. fig 6:640, par[0091]*).

**As per claim 28**, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit (*Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit*), which determines from the flow velocity of the medium, the temperature value and the pressure, a derived, measured variable (e.g. heat flux value or mass flow value) (*Cook et al. fig 7, par[0028]*,

***par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables). Obviousness is as established in claim 25.***

**As per claim 29**, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device with an installed, additional, temperature sensor, and the transmitting measurement transmitter is a temperature measuring device.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device (***Cook et al. fig 1:140, par[0056]***) with an installed, additional, temperature sensor (***Cook et al. par[0056]: wherein the temperature sensor not shown in fig 1***), and the transmitting measurement transmitter is a temperature measuring device (***Cook et al. fig 6:640, par[0091]***).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would be to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

**As per claim 30**, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

in the measuring device, a flow computing unit is installed (***Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit***), which determines from the flow

velocity of the medium, the temperature value of the temperature sensor of the vortex measuring device and the temperature value of the temperature measuring device, a derived, measured variable (e.g. energy drain) (***Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables***).

**As per claim 31**, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a temperature measuring device, which determine, respectively, flow velocity and temperature in a medium.

Cook et al. discloses the method wherein the receiver measurement transmitter is a vortex measuring device (***Cook et al. fig 1:140, par[0056]***) and the transmitting measurement transmitter is a temperature measuring device (***Cook et al. fig 6:640, par[0091]***), which determine, respectively, flow velocity and temperature in a medium (***Cook et al. fig 7, par[0028]-par[0030]***).

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

**As per claim 32**, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

in the vortex measuring device, a flow computing unit is installed (*Cook et al. par[0070] In 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit*), which determines from the flow velocity of the medium and the temperature, a derived, measured variable (e.g. heat flux value or mass flow value, for liquids or saturated steam) (*Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables*).

4. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Langels et al. (US6473656B1)*, in view of *Heidepriem (US2006/0164771A1)*, in view of *Cook et al. (US2004/0049358A1)* and further in view of *Van Der Pol (EP0691528A2)*.

As per claim 34, Langels et al. in view of Heidepriem and Cook et al. does not disclose the method wherein the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device.

Van Der Pol discloses the method wherein:

the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device (*Van Der Pol fig 1, page 2 In 13-20: wherein the measurement transmitter is a Coriolis flow measuring device*).

Therefore, it would have been obvious to implement the type of receiver measurement transmitter of Van Der Pol in the Langels et al. in view of Heidepriem and

Cook et al. method for transmitting measured values between two measurement transmitters.

The motivation would provide a method for measuring and/or monitoring flow parameters of a medium, which medium flows through a mass flow measuring instrument.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMINE BENLAGSIR whose telephone number is (571)270-5165. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN ZIMMERMAN can be reached on (571)272-3059. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy Edwards, Jr./  
Primary Examiner, Art Unit 2612

**/A. B./**  
**Examiner, Art Unit 2612**